

**PALEONTOLOGICAL IDENTIFICATION REPORT FOR
THE STATE ROUTE 68/CORRAL DE TIERRA ROAD
INTERSECTION IMPROVEMENT PROJECT**

**EXPENDITURE AUTHORIZATION 05-0H8230
CALTRANS DISTRICT 5
MONTEREY COUNTY, CALIFORNIA
Mon-68-PM 12.8/13.2**

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LSA Project WRS0605

July 2013

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INTRODUCTION

The California Department of Transportation (Caltrans) and the County of Monterey Public Works Department (County) propose to improve the intersection of State Route 68 (SR 68) and Corral de Tierra Road, SR 68 (post mile 12.8 to 13.2), Expenditure Authorization #05-0H8230.

The SR 68/Corral de Tierra Road Intersection Improvement Project Area Limits (PAL) is 8.4 miles southwest of the City of Salinas, in northeastern Monterey County, California (Figures 1). Caltrans is the Lead Agency for the California Environmental Quality Act (CEQA), and the County is a Responsible Agency. Although current funding for the project is local, there is a potential for federal funds. If federal funds are provided, it will be necessary to comply with the National Environmental Policy Act (NEPA) in addition to CEQA. The Federal Highway Administration (FHWA) will be the Lead Agency for NEPA, with oversight provided by Caltrans.

The project objective is to improve the operation and safety of the signalized SR 68 intersection with Corral de Tierra Road. The 9.5-acre PAL is approximately 2,500 feet long, east-to-west along SR 68 and approximately 200 feet at its widest, and 1,000 feet long north-to-south along Corral de Tierra Road and approximately 150 feet at its widest (Figure 2).

The proposed roadway improvements would widen the approaches to the SR 68/Corral de Tierra Road intersection to accommodate the construction of a second left turn lane from westbound SR 68 to southbound Corral de Tierra Road by shifting the through lane to the north. In addition, a second southbound receiving lane would also be constructed on Corral de Tierra Road departing the intersection to receive traffic from the second left-turn lane. The proposed project would not change the existing eastbound SR 68 approach, northbound Corral de Tierra Road approach, or southbound Cypress Community Church driveway approach. The paved shoulders of Corral de Tierra Road within the PAL would be widened to 8 feet to better accommodate pedestrians and facilitate the future addition of Class II bicycle lanes to Corral de Tierra Road. The intersection traffic signal system would be modified to accommodate the widening on the north side of SR 68 to relocate the westbound through lane and the second west-to-southbound left-turn lane.

The proposed project would require an excavation depth of 3 feet for the widening of the roadway approaches. Shallow trenching, less than 3 feet deep, will be required to install conduits for the traffic signals. Retaining wall construction would excavate into the mechanically-stabilized embankment on the north side of SR-68 west of Corral de Tierra Road, but that embankment was constructed in 1993, so excavation for the retaining wall would not remove previously-undisturbed soils. The maximum vertical extent of the PAL is 10 feet deep, but only at the locations of the major traffic signal poles, which would be on cast-in-drilled-hole piles. No driven piles are required for this project.

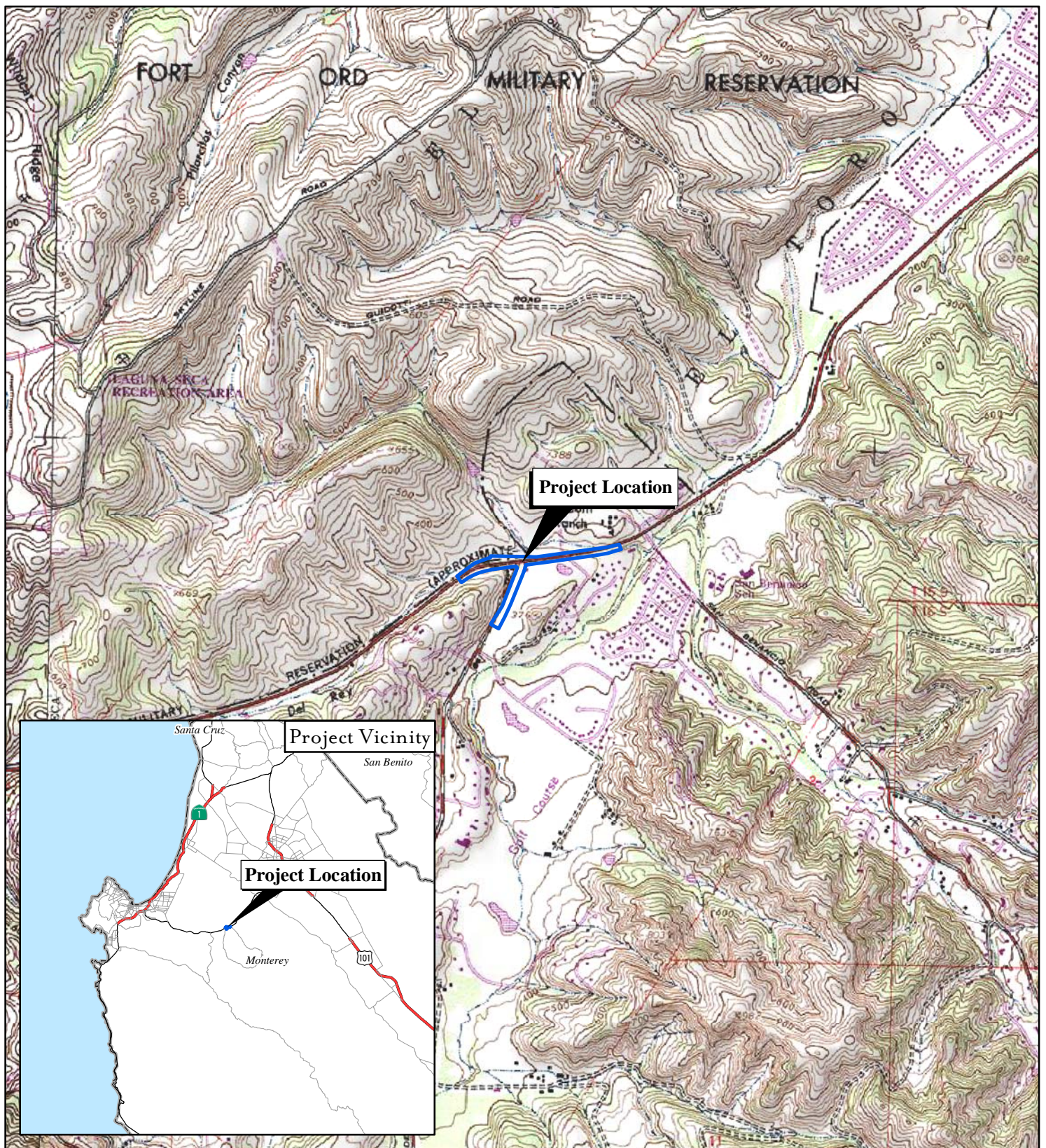
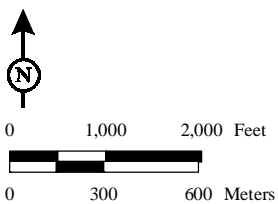
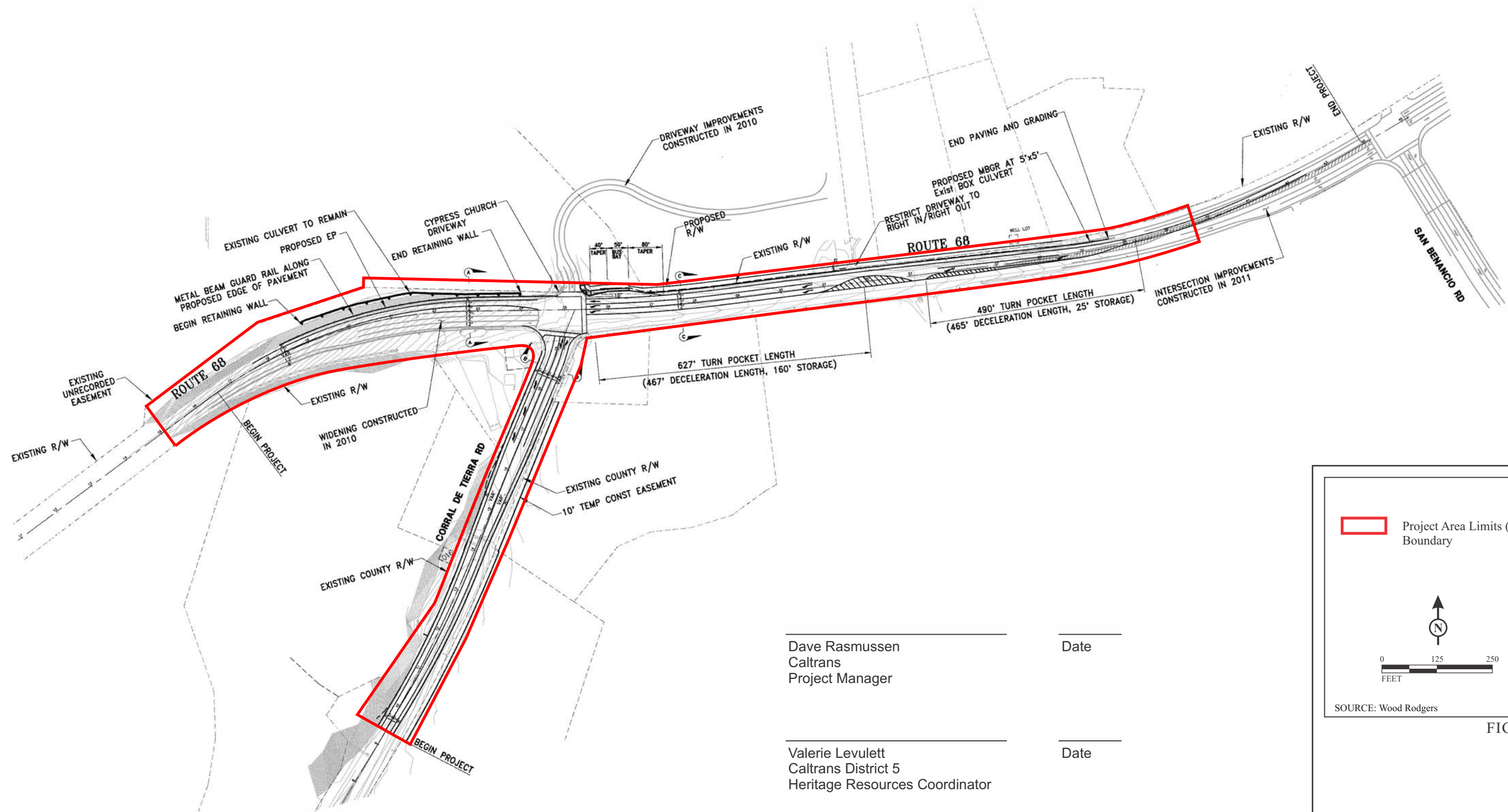


FIGURE 1



SR 68 / Corral de Tierra Road
Intersection Improvement Project
Project Location Map

SOURCE: USGS 7.5' QUAD, SPRECKELS, CA (1984); Wood Rodgers (2006)
I:\WRS0605\GIS\Fig1.mxd (4/18/2007)



 Dave Rasmussen
 Caltrans
 Project Manager

 Date

 Valerie Levulett
 Caltrans District 5
 Heritage Resources Coordinator

 Date

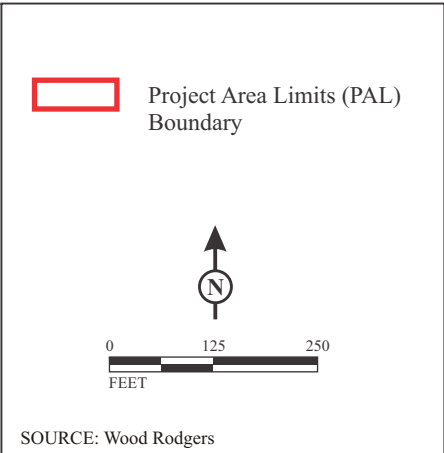


FIGURE 2

*SR-68/Corral de Tierra Road
 Intersection Improvement Project*
 Project Area Limits
 MON-68, P.M. 12.8/13.2
 05-OH8230

LSA Associates, Inc. (LSA), prepared this Paleontological Identification Report (PIR) to document paleontological resources identification efforts in the PAL to address requirements of the CEQA.

This study consisted of archival and background research which included a review of the relevant literature; fossil locality searches; and a field survey. LSA paleontologist Andrew Grass conducted a field survey of the PAL on March 30, 2007.

No recorded paleontological resources were identified within the PAL. Adjacent to the PAL south of SR 68 and west of Corral de Tierra Road there are outcrops of the paleontologically sensitive Paso Robles Formation. In addition a fossil locality search identified a fossil locality in the hills north of SR 68 in which a fossil sea lion was discovered in the Santa Margarita Sandstone.

It is Caltrans' policy to avoid paleontological resources whenever possible. Further investigations may be needed if the site(s) cannot be avoided by the project. If buried paleontological materials are encountered during construction, it is Caltrans' policy that work stop in that area until a qualified paleontologist can evaluate the nature and significance of the find. Additional survey will be required if the project changes to include areas not previously surveyed.

LEGISLATIVE AND REGULATORY CONTEXTS

Paleontology is the study of life from past geologic ages. Several laws regulate impacts to paleontological resources. Some of these regulations are

- *The Antiquities Act of 1906* requires permission for collecting 'objects of antiquity' on public lands.
- *The National Environmental Policy Act* requires federal agencies to use "all practicable means to preserve important historic, cultural and natural aspects of our national heritage when projects occur on federal land. The level of consideration may vary with the agency involved.
- *The California Environmental Quality Act* states that projects should not be approved if there are feasible alternatives that would avoid "significant effect" to the environment. This statement includes effects to sensitive paleontological resources.
- *Public Resource Code 5097.5* requires permission from the regulating agency to "excavate upon, remove, destroy, injure or deface..." paleontological remains on public land

HIGHWAY PROJECT LOCATION AND DESCRIPTION

Caltrans and the County propose to improve the intersection of SR 68 and Corral de Tierra Road, SR 68 post mile PM 12.8 to 13.2, Expenditure Authorization 05-0H8230. The project objective is to improve the operation and safety of the signalized SR 68 intersection with Corral de Tierra Road.

Build Alternative

The proposed project would widen the SR 68/Corral de Tierra intersection to the north of the existing alignment to accommodate the construction of a second (additional) left turn lane from westbound SR 68 onto southbound Corral de Tierra Road. Both of the left turn lanes (in the median of SR 68) would have sufficient length to accommodate deceleration from 53 miles per hour. An

additional receiving lane would also be constructed on southbound Corral de Tierra Road. The paved shoulders of Corral de Tierra Road within the project area would be widened to 8 feet to better accommodate pedestrians and facilitate the future addition of Class II bicycle lanes to Corral de Tierra Road.

About 520 feet of Steel Crib retaining wall (or equivalent) would be constructed west of Corral de Tierra Road along the north embankment of SR 68. The retaining wall would lie below the existing road grade and therefore would not be visible from SR 68. The retaining wall would minimize the footprint of the embankment needed to accommodate the widened road section.

A left turn lane would also be constructed from westbound SR 68 into the Corral de Tierra Country Club driveway. The Corral de Tierra Country Club driveway is located east of Corral de Tierra Road on the south side of SR 68.

No provisions for left turns to or from the residential driveway on the north side of SR 68 would be made. As part of the proposed project, a painted median island would be created in front of the residential driveway restricting drivers to right-in, right-out access. Drivers needing to make left-in, left-out movements would need to make a U-turn at the traffic signal at either San Benancio Road or at Corral de Tierra Road. U-turn movements at these signalized intersections are both legal and safe.

The proposed project would require an excavation depth of 3 feet for the widening of the roadway approaches. Shallow trenching, less than 3 feet deep, will be required to install conduits for the traffic signals. Retaining wall construction would excavate into the mechanically-stabilized embankment on the north side of SR-68 west of Corral de Tierra Road, but that embankment was constructed in 1993, so excavation for the retaining wall would not remove previously-undisturbed soils. The maximum vertical extent of the PAL is 10 feet deep, but only at the locations of the major traffic signal poles, which will be on cast-in-drilled-hole piles. No driven piles are required for this project.

BACKGROUND RESEARCH

Background research was done to determine if paleontological resources (fossils) and geologic units known to contain fossils are within or adjacent to the PAL. This research, which consisted of fossil locality searches, a literature review, and correspondence with Caltrans paleontologist Wayne Mills was done to identify the geologic units, paleontological studies, fossil localities (i.e. a location at which paleontological resources have been documented), and the types of fossils that may be within or adjacent to the PAL.

Fossil Locality Searches. A fossil locality search conducted by the staff of the University of California Museum of Paleontology (UCMP), Berkeley, identified no fossil localities within or adjacent to the PAL. Fossil locality V 6627 (*Pithanoteria starri*), a fossil of the earliest member yet known of the sea lion family (Otariidae), was identified approximately 360 feet north of SR 68 and approximately 780 feet west of SR 68's intersection with Corral de Tierra Road (Figure 3). V 6627 consists of an impression of a partial cranium (Repenning and Tedford 1977). There may be additional pieces of the animal in the vicinity of the initial discovery.

A fossil locality search conducted by the staff at the Natural History Museum of Los Angeles County identified no vertebrate fossil localities within or adjacent to the PAL. The search identified localities

to the south in San Luis Obispo County in the Paso Robles Formation, which also underlies parts of the PAL. See Attachment A for copies of the locality search correspondence.

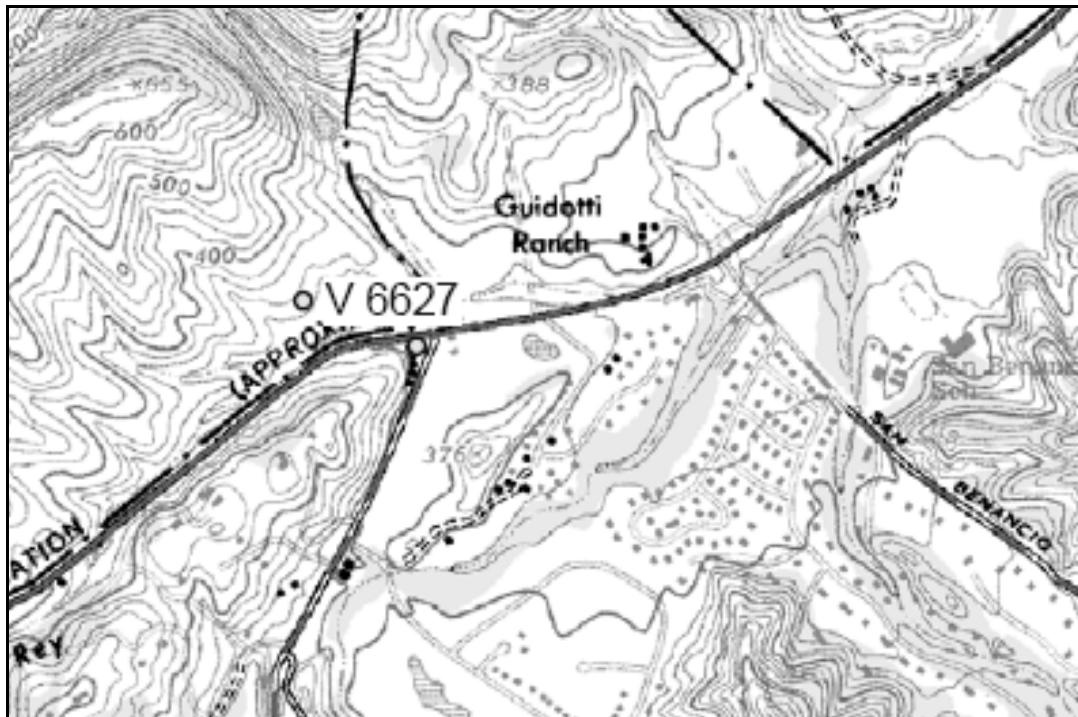


Figure 3: Fossil Locality V 6627

Literature Review. LSA reviewed paleontological and geological literature relevant to the PAL and its vicinity. This review identified the majority of the PAL as being underlain by Holocene-aged (present to 10,000 years old) flood deposits, which are not paleontologically sensitive. Small parts of the PAL are underlain by the Plio-Pleistocene aged (1.5-5.3 million years old) Paso Robles Formation, which is known to contain fossils. See References for a list of literature reviewed.

Information from the Paleontology Sensitivity Mapping Project (PSMP) was obtained through correspondence with Wayne Mills, Paleontologist, Caltrans District 5, San Luis Obispo. To assist with the identification of sensitive paleontological resources, Caltrans and California State University Fresno published Paleontology Sensitivity Mapping Project (PSMP) in June 2000. This work studied fossil occurrences throughout the Central Region, and assigned potentials for highways in the Central Region to contain sensitive paleontological resources. Since PSMP is necessarily general in nature, it is a good tool for initial studies, but often smaller scale geologic maps need to be consulted to accurately determine if further work needs to be done to preserve sensitive resources on individual projects. Mr. Mills stated that the PSMP considered the Paso Robles Formation in the PAL to be paleontologically sensitive. See Attachment B for copies of the correspondence with Mr. Mills.

PALEONTOLOGICAL SETTING

Soils. Soils in the PAL west of the SR 68/Corral de Tierra Road intersection are Santa Ynez fine sandy loam, which are a deep (>5 feet), well-drained, and well developed soil (A-Bt-C profile) formed in alluvium on terraces and foot slopes (Cook 1978:72). Soils in the eastern portion of the

PAL are Gorgonio sandy loam, which are deep (>5 feet), well-drained, weak to moderately developed soils (A-C profile), and are typically stratified from several periods of deposition (Cook 1978:34).

Holocene Flood Deposits. Younger flood deposits (Qyf) occur along the north side of SR 68, mainly west of the intersection with Corral de Tierra Road. They consist of unconsolidated, relatively fine grained heterogeneous sand and silt with thin, discontinuous layers of clay, and are generally less than 18 feet thick. Older flood deposits (Qof) are present along the both sides of SR 68 east of the intersection with Corral de Tierra Road, and on the east side of Corral de Tierra Road. These deposits consist of unconsolidated, relatively fine grained heterogeneous sand and silt with frequent thin layers of clay. They are generally less than 54 feet thick (Clark et al. 2000). These deposits are not sensitive for significant paleontological resources.

Paso Robles Formation. The Paso Robles Formation (QTc) is made up of Plio-Pleistocene aged (1.5 to 5.3 million years old) sediments composed mainly of conglomerate and sandstone (Burch and Durham 1970). The Paso Robles Formation is estimated to be 1,000 feet or more thick and conformably overlies the upper Miocene aged (5.3 to 11.2 million years old) marine Santa Margarita Sandstone Formation (Burch and Durham 1970), and locally unconformably overlies the middle Miocene aged (11.2 to 16.6 million years old) marine Monterey Shale (Addicott and Galehouse 1973; Burch and Durham 1970). Although the Paso Robles Formation is predominantly non-marine (Burch and Durham 1970), it is known to locally contain abundant invertebrate marine fossils, as well as an isolated incident of a pinniped (seals and sea lions) 8 miles south of Santa Margarita (Addicott and Galehouse 1973).

Santa Margarita Formation. The Santa Margarita Formation (Tsm) is an upper Miocene aged (5.3 to 11.2 million years old) thick-bedded calcareous sandstone that outcrops in the hills approximately 1,500 feet north of the PAL. This unit also contains areas of mudstone and conglomerate. It varies from 100-500 feet thick in different areas, and conformably overlies the middle Miocene aged Monterey Shale. Large amounts of marine invertebrate fossils have been recovered from the Santa Margarita Formation, including a new species of bivalve (*Lucinisca? Brabbi* n. sp.) (Burch and Durham 1970; Powell 2001).

FIELD SURVEY

LSA paleontologist Andrew Grass conducted a field survey of the PAL on March 30, 2007.

Field Methods. The entire PAL and adjacent lands was surveyed on foot. Due to the thickness of the overlying Holocene flood deposits and alluvium the paleontologically sensitive Paso Robles Formation was only directly observable in a small area.

An outcrop of the Paso Robles Formation was identified on the south side of SR 68, west of the intersection at the very end, and extending beyond the PAL (Figure 4). The outcrop is approximately 20-30 feet up on the hillside directly south of the western end of the PAL. The outcrop was heavily weathered, poorly consolidated and showed signs of animal habitation (burrows). A review of the outcrop identified no fossils, although due to the terrain the entire outcrop was not accessible.

The survey was documented in field notes, maps, and photographs.



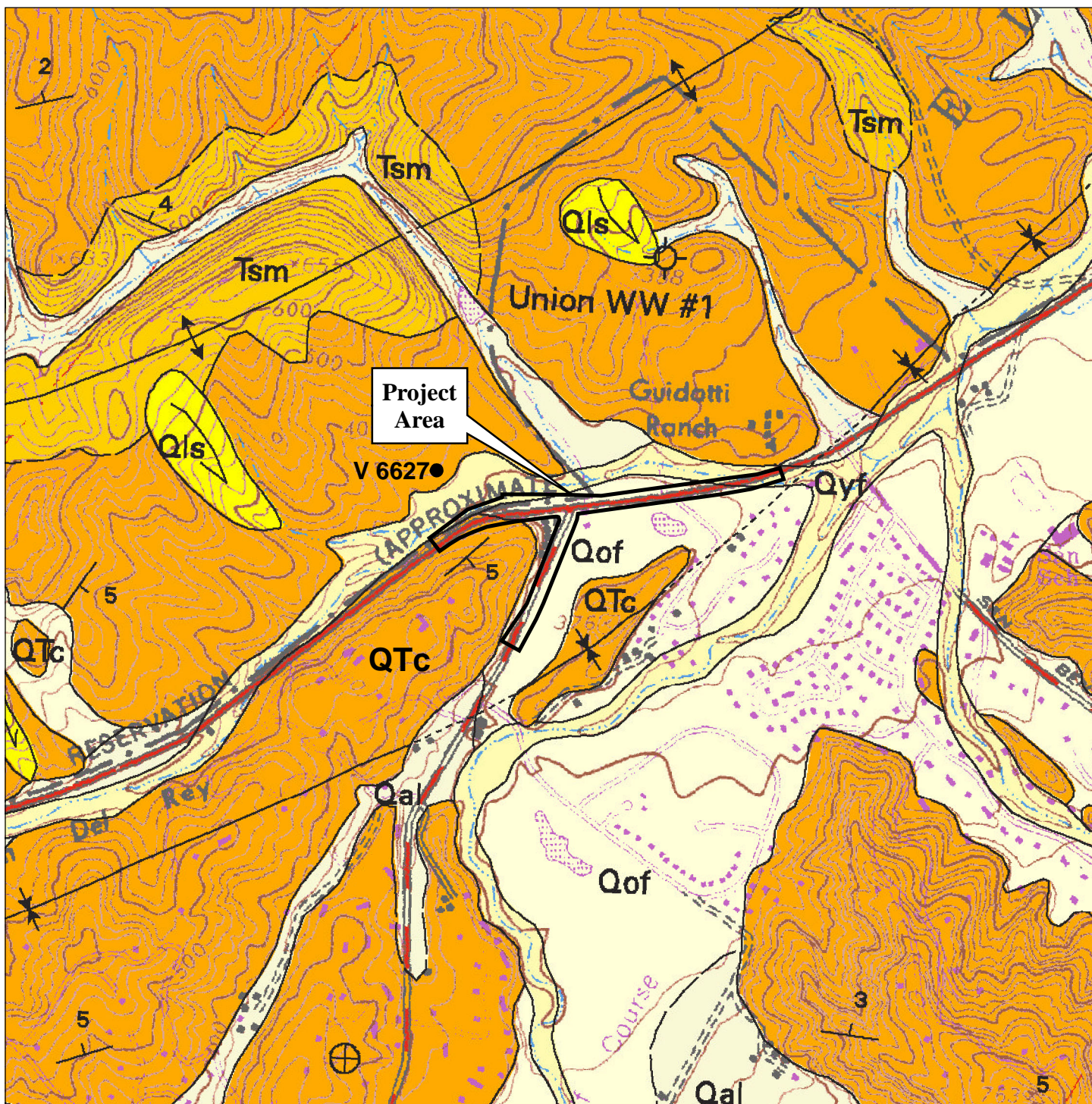
Figure 4: Paso Robles outcrop along south side of SR68

STUDY RESULTS

The PAL is underlain by Holocene-aged flood plain deposits, and the hills directly adjacent are composed of Pliocene/Pleistocene aged Paso Robles Formation and the upper Miocene aged Santa Margarita Sandstone Formation. The PSMP lists the Plio-Pleistocene aged Paso Robles Formation as having a high potential for significant paleontological resources. The Santa Margarita Sandstone is not listed as paleontologically sensitive in the PAL. There is, however, a Santa Margarita Sandstone locality relatively close to the highway, and, for this project, the Santa Margarita Sandstone should be considered sensitive.

The majority of the PAL does not contain any outcrops of paleontologically sensitive formations and is situated on Quaternary flood plain deposits which are not sensitive for significant paleontological resources. Outcrops of the paleontologically sensitive Paso Robles Formation intersect the PAL at small areas on the west side of Corral de Tierra Road, and both sides of SR 68 in the western end of the PAL (Figure 5).

In consideration of the above, the western portion of the project's PAL is considered sensitive for paleontological resources, and depending on excavation depth, the rest of the PAL is possibly sensitive.

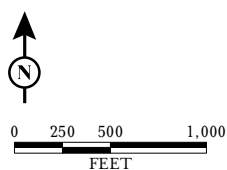


- | | |
|---------------|----------------------------------------------------------|
| Qal | Alluvial deposits, undivided (Holocene) |
| Qyf | Younger flood-plain deposits (Holocene) |
| Qls | Landslide deposits (Quaternary) |
| Qof | Older flood-plain deposits (Holocene) |
| Qtc | Continental deposits, undivided (Pleistocene) |
| Tsm | Santa Margarita Sandstone (Miocene) |
| V 6627 | Fossil Locality (<i>Pithonotaria storri</i> UCMP 74813) |

HK WTG"7"

State Route 68/Corral de Tierra
Intersection Improvement Project
Monterey County, California

Project Area Geology



PROJECT IMPACTS AND RECOMMENDATIONS

The majority of the PAL contains Holocene aged flood deposits which are not paleontologically sensitive (Figure 5). The scope of the project indicates that work will only be done on the north side of SR 68 and the east side of Corral de Tierra Road. If project activities only involve work on and near the surface, significant paleontological resources are not likely to be affected. If project activities are to include deeper excavation past the flood deposits and into the underlying Paso Robles Formation or Santa Margarita Formation, (greater than 5 foot deep excavations), there is a possibility that significant paleontological resources will be affected, and these excavations shall be monitored by a qualified paleontologist to identify, evaluate, and provide recommendations for the treatment of any sensitive fossil resources that may be uncovered by the project.

Since sensitive paleontological resources (vertebrate or plant fossils) may occur in low sensitivity formations, the following statement should be included in the Resident Engineer's Instructions.

“If any sensitive paleontological resources (vertebrate or plant fossils) are discovered during construction, it is required that construction be halted in the immediate vicinity of the discovery (33-foot radius), until the District Archaeologist or District Paleontology Coordinator have the opportunity to review the discovery. Contact names and telephone numbers are:

*District Paleontology Coordinators, Wayne Mills (805) 549-3777 and
Isaac Leyva (805) 549-3487*

Remediation of any sensitive resources encountered before or during construction can include removal, preparation and curation of any significant remains.”

REFERENCES

Addicott, Warren O. and Jon S. Galehouse

- 1973 Pliocene Marine Fossils in the Paso Robles Formation, California. *Journal of Research of the U.S. Geological Survey*, vol. 1, No. 5, pg. 509-514.

Burch, Stephen H. and David L. Durham

- 1970 Complete Bouguer Gravity and General Geology of the Bradley, San Miguel, Adelaida, and Paso Robles Quadrangles, California. *U.S. Geological Survey Professional Paper 646-B*.

Clark, Joseph C., Earl E. Brabb, and Lewis I. Rosenberg

- 2000 Geologic Map of the Spreckels 7.5-Minute Quadrangle, Monterey County, California U.S. Geological Survey, Miscellaneous Field Studies MF-2349.

Cook, Terry D.

- 1978 *Soil Survey of Monterey County, California*. U.S. Department of Agriculture, Soil Conservation Service, in cooperation with the U.S. Forest Service and the University of California Agricultural Experiment Station.

Hart, Earl W.

- 1976 *Basic Geology of the Santa Margarita Area, San Luis Obispo County, California*. California Division of Mines and Geology Special Bulletin 199.

Powell, Charles L

- 2001 Mega-invertebrate fossils from Tertiary rocks of the Spreckles 7.5' quadrangle, Monterey County, California, with description of an unusual faunule from the Monterey Formation and a new lucinid bivalve from the Santa Margarita Sandstone. *PaleoBios* 21(2):15-27.

Repenning, Charles A., and Richard H. Tedford

- 1977 *Otarioid Seals of the Neogene*. U.S. Geological Survey Professional Paper 992, pp. 58.

Attachment A

Fossil Locality Search Correspondence

Andy Grass

From: pholroyd@berkeley.edu
Sent: Thursday, March 01, 2007 10:04 AM
To: Andy Grass
Cc: mark@berkeley.edu
Subject: Re: Fossil locality search Corral De Tierra Road LSA project WRS0605

Attachments: ATM_1-Antioch South Pt1; CA.pdf



ATM_1-Antioch
South Pt1; CA.p...

Dear Mr. Grass,

Our records indicate that there is a vertebrate fossil locality in your project area, and I have attached a map indicating it's location. It's a marine mammal from the Santa Margarita Formation, and you can get additional information on the locality and specimen from our online database at ucmpdb.berkeley.edu.

> 2/23/2007

>

> LSA Associates, Inc.

> 157 Park Place

> Point Richmond, Ca 94801

> 510-236-6810

>

> Dear Dr. Holroyd,

>

> I've got another locality search for you. This time centered around

> coordinates 36° 34' 42" N, 121° 43' 36" W, at the intersection of state

> route 68 and Corral De Tierra Road in Monterey County, east of Monterey.

> The billing information can again be sent to George McKale at the address

> above.

> I've got two more for you, but I'll send them in separate emails so you

> can keep records of them easier.

>

>

>

>

> <<Figure2_fossil.pdf>>

>

>

>

--

Pat Holroyd, Ph.D.
Museum of Paleontology
University of California
Berkeley, CA 94720
pholroyd@berkeley.edu

Bob

LSA

LSA ASSOCIATES, INC.
1500 IOWA AVENUE, SUITE 200
RIVERSIDE, CALIFORNIA 92507

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951.781.4277 FAX

BERKELEY
CARLSBAD
COLMA

FORT COLLINS
IRVINE
PALM SPRINGS

POINT RICHMOND
ROCKLIN
SAN LUIS OBISPO

April 16, 2007

Dr. Sam McLeod
Vertebrate Paleontology
Natural History Museum of Los Angeles County
900 Exposition Boulevard
Los Angeles, California 90007

Subject: Request for Paleontological Resources Records Search for the Corral De Tierra Intersection Project, Fort Ord Area, Monterey County, California (LSA Project No. WRS0605)

Dear Dr. McLeod:

LSA Associates, Inc. (LSA) would like to obtain a paleontological resource records search for sediments around the Corral De Tierra Intersection project at State Route 68, near Fort Ord, Monterey County, California. The locality is shown on the *Spreckels* 7.5-minute U.S. Geological Survey (USGS) quadrangle map (attached). The project is located on older Holocene sediments (Qof) that cover Pleistocene deposits (Qtc) and the Miocene Santa Margareta Sandstone (Tsm).

LSA requests that you search for paleontological resource locality records within ten miles of this project. If localities are found, please plot on a map and forward to my office (fax 951-781-4277). LSA would appreciate the results of the search by May 3, 2007. Please reference LSA project number WRS0605 on your invoice.

Sincerely,

LSA ASSOCIATES, INC.


Robert E. Reynolds
Paleontology, Senior Cultural Resource Manager

Attachment: *Spreckels* Quadrangle Map
Geologic map

20 April 2007

LSA Associates, Inc.
1500 Iowa Avenue, Suite 200
Riverside, California 92507

Attn: Robert E. Reynolds, Paleontology

re: Paleontological Resources Records Check for the proposed Corral De Tierra Intersection
Project, Fort Ord Area, Monterey County, LSA Project No. WRS0605, project area

Dear Robert:

I have conducted a careful check of our paleontology collection records for the locality and specimen data for the proposed Corral De Tierra Intersection Project, Fort Ord Area, Monterey County, LSA Project No. WRS0605, project area as outlined on the section of the Spreckels USGS topographic quadrangle map that you sent to me on 16 April 2007. We do not have any vertebrate fossil localities directly within the proposed project area, but we do have vertebrate fossil localities, although at some distance, from the same sedimentary deposits that occur in the proposed project area.

Although there may be some younger Quaternary gravels in the Canyon Del Rey drainage that runs parallel to the Monterey Salinas Highway (Highway 68), deposits that are unlikely to contain significant vertebrate fossils, otherwise the entire proposed project area has exposures of the Plio-Pleistocene Paso Robles Formation. We have a few fossil vertebrate localities from the Paso Robles Formation including LACM 4964, 5659, 5799, and 5840, all situated far to the south of the proposed project area in San Luis Obispo County east and southeast of Templeton. These localities have produced a composite fossil fauna of terrestrial vertebrates including giant tortoise, *Geochelone*, extinct elephantoid, Gomphotheriidae, mastodon, *Mammut*, horse, Equidae, camel, *Camelops hesternus*, and bison, *Bison latifrons*.

Surface grading or shallow excavations in the younger Quaternary gravels possibly exposed in the lowest lying portions of the proposed project area probably will not encounter significant fossil vertebrate remains. Deeper excavations that extend down into older Quaternary deposits, and any excavations in the Paso Robles Formation exposed elsewhere in the proposed project area, however, may well uncover significant vertebrate fossils. Any substantial excavations in the proposed project area, therefore, should be monitored closely to quickly and

professionally recover any fossil remains discovered while not impeding development. Any fossils recovered during mitigation should be deposited in an accredited and permanent scientific institution for the benefit of current and future generations.

This records search covers only the vertebrate paleontology records of the Natural History Museum of Los Angeles County. It is not intended to be a thorough paleontological survey of the proposed project area covering other institutional records, a literature survey, or any potential on-site survey.

Sincerely,

A handwritten signature in black ink, reading "Samuel A. McLeod". The signature is written in a cursive style with a large, stylized 'S' and 'M'.

Samuel A. McLeod, Ph.D.
Vertebrate Paleontology

enclosure: invoice

Attachment B

California Department of Transportation Correspondence

Andy Grass

From: Wayne Mills [wayne_mills@dot.ca.gov]
Sent: Wednesday, March 07, 2007 9:23 AM
To: Andy Grass
Subject: RE: SR 68/Corral de Tierra project, paleo issues

Sorry, I neglected to answer your questions.

Yes, PSMP mentions the Santa Margarita formation, but only between PM 10.0 /11.6, and 15.5/16.5 where it is within 1 mile of the highway (although your map shows it a lot closer than 1 mile...).

I think the Qtc is the equivalent of the Paso Robles Formation, at least in age and origin (Plio-Pleistocene nonmarine).

Wayne W. Mills
Caltrans District 5
Environmental Engineering
(805) 549-3193, (8) 629-3193
Wayne_mills@dot.ca.gov

-----Original Message-----

From: "Andy Grass" <Andy.Grass@lsa-assoc.com>
To: "Wayne Mills" <wayne_mills@dot.ca.gov>
Sent: 03/06/2007 04:40PM
Subject: RE: SR 68/Corral de Tierra project, paleo issues

I actually have a much finer scale map of the Spreckels quadrangle. You can see it at <http://geopubs.wr.usgs.gov/map-mf/mf2349/skmap.pdf> if you'd like. According to that map the intersection is mainly in Qyf and Qof, flood-plain deposits. Very near the road there is Qtc, continental deposits, and Tsm, Santa Margarita Sandstone (which is what the UCMP locality search showed had a fossil locality in). The Santa Margarita is my main concern, but until I actually get out there and look around I won't know if it intersects the road in anyway. Are any of these formations mentioned in the PSMP?

As for the LACMNH, I think I've heard of using their database here before, but I'm not sure. It may be something that has to be worked into the budget of the project. I'll bring it up with my superiors.

Thanks for your help!

-----Original Message-----

From: Wayne Mills [mailto:wayne_mills@dot.ca.gov]
Sent: Tuesday, March 06, 2007 4:23PM
To: Andy Grass
Subject: Re: SR 68/Corral de Tierra project, paleo issues

Hi Andy:

Permanent Impacts continue after the conclusion of construction. Short-term impacts only occur during construction, Therefore, if any impacts to sensitive paleo resources occur, they are both short and long-term, by my logic. Corral De Tierra is Mon-68-PM 12.95. PSMP is a general guide based on The appropriate sheet from the 1:250,000 scale Geologic Map of California (Santa Cruz Sheet, in the case of Corral De Tierra). If you can find larger scale maps, they would be much more useful for evaluating individual projects like this one. PSMP defines the following formations and sensitivities in the project

area.

PM 4.0/22.0 Quaternary alluvium low potential
PM 7.9/17.9 Paso Robles Formation (Plio-Pleistocene non-marine) high potential
PM 11.7/17.1 Aromas Sand, Dos Picachos Gravels (Pleistocene) low potential

These are supposedly the formations that occur within 1-mile of the highway. PSMP also considers Qal to be sensitive if it is within a radius of one mile of a known find.

The Geologic Map of California- Santa Cruz Sheet suggests that the intersection is mostly in Qal.

I would hope to see a larger scale geologic map in the report, showing the proposed improvements relative to the geology.

If you have any further questions, I will do what I can to help. BTW, do you have a way of checking the vertebrate database for LACMNH? That would be the next place I would look.

Wayne W. Mills
Caltrans District 5
Environmental Engineering
(805) 549-3193, (8) 629-3193
Wayne_mills@dot.ca.gov

-----Original Message-----

From: "Andy Grass" <Andy.Grass@lsa-assoc.com>
To: <wayne_mills@dot.ca.gov>
Sent: 03/06/2007 03:34PM
Subject: SR 68/Corral de Tierra project, paleo issues

Hello. My name is Andy Grass and I'm a paleontologist working with LSA Assoc. on the Paleontological Identification Report for the SR 68/Corral de Tierra Road intersection project. I was given your name as a contact with Caltrans, and I had a couple of questions. I was given an example of a report from Mill Creek to work from, and I was wondering what exactly is meant by "permanent" and "short term" impacts, what exactly the difference is between them?

Also, do I go through you to request information from the Paleontology Sensitivity Mapping Project? A locality search with the University of California Museum of Paleontology showed a fossil locality very near the project site, so if this mapping project has more information that would be great.

I apologize if you're not the correct person to address these questions too. If this is the case could you please forward it to the correct party?

Thankyou.